

INCH-POUND

A-A-59798

7 June 2007

COMMERCIAL ITEM DESCRIPTION

HELMET, DAMAGE CONTROL/FIRE FIGHTING

The General Services Administration has authorized the use of this commercial item description, for all federal agencies.

1. **SCOPE.** This commercial item description covers the requirements for a one-size, high temperature resistant damage control/fire fighting (DC/FF) helmet for use aboard Navy ships by damage control personnel fighting below-deck fires.

2. **SALIENT CHARACTERISTICS.**

2.1 **Design and construction.** The DC/FF helmet is comprised of a shell, retention/suspension system, ear cover, face shield, and reflective markings. The shell consists of a one-piece molded, fiber reinforced composite that is designed to provide the user cranial, neck, eye, and ear protection from impact, heat, puncture, flame, and electrical hazards. The shell design incorporates a brim to divert water run-off to the rear of the shell. The shell design incorporates a removable/replaceable suspension system, which includes a ratchet cushioned headband system that is adjustable for head sizes 6½ to 8. The helmet contains an aramid chin strap with a quick-release fastener and a removable, flame-resistant ear cover.

2.1.1 **Sizes.** The DC/FF helmet shall be made in one size only. Adjustment shall be made by the adjustable suspension system.

2.1.2 **Weight.** The weight of the complete helmet (face shield and retention system) shall not exceed 50 ounces.

2.1.3 **Labeling.** A commercial label is acceptable. If procured under contract, an additional permanent printed or stamped label containing the contract number and the national stock number shall be included.

2.2 **Materials.** The contractor shall certify that the DC/FF helmet shall be constructed, tested, and labeled in accordance with the National Fire Protection Association (NFPA) Standard 1971, in addition to the following:

2.2.1 **Shell.** The design and measurement of the DC/FF helmet shall conform to figure 1. The shell must have an edge trim. The exterior surface of the shell shall be red in color.

Beneficial comments, recommendations, additions, deletions, clarifications, etc. and any data that may improve this document should be sent to: Commander, Naval Sea Systems Command, ATTN: SEA 05Q, 1333 Isaac Hull Avenue, SE, Stop 5160, Washington Navy Yard DC 20376-5160 or emailed to CommandStandards@navy.mil, with the subject line "Document Comment". Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at <http://assist.daps.dla.mil>.

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FIGURE 1. Helmet, damage control/fire fighting.

2.2.2 Retention system. Retention system shall include a suspension system, nape device, and chin strap.

2.2.2.1 Suspension system (energy absorbing system, headband, and crown strap). The design shall incorporate a removable/replaceable energy absorbing system containing an adjustable, ratchet type, cushioned head band/crown strap system. The crown straps shall possess a protective interface, so that the intersection of the straps does not rest directly on the user. This may be achieved with a cushioned headband liner or padding attached directly to crown strap intersection. All crown straps shall be positively attached to the suspension system.

2.2.2.2 Nape device. The nape device, located below the Bitragion Inion Arc, shall be used for helmet retention.

2.2.2.3 Chin strap. The chin strap shall consist of an aramid webbing containing a high temperature resistant, quick release fastener. The chin strap shall be attached to the outer shell.

2.2.3 Ear cover. The ear cover shall be constructed of a polybenzimidazole/Kevlar® outershell material, moisture barrier, and liner, meeting a Thermal Protection Performance (TPP) rating of at least 20. TPP testing shall be conducted in accordance with NFPA 1971. The liner shall consist of meta or para-aramid and/or polybenzimidazole fiber or any combination thereof. The ear cover shall either be bound on all edges with the base fabric, or raw edges turned in and stitched. No raw or serged edges shall be visible. The ear cover shall have a chin strap that is positively secured on one side and closed by means of hook and pile fastener tape to the other side. The chin strap shall be no less than 11.75 inches in length measured from intersection of edge of ear flap to end of chin strap. The center, back length of the ear cover measured from bottom edge of impact liner to bottom edge of ear cover shall be no less than 7 inches.

2.2.4 Face shield. The face shield shall be manufactured from a high heat material that has a heat deflection temperature of 325 °F at 264 psi, 0.25-inch specimen, when tested in accordance with ASTM D648. The face shield shall be either 4 or 5 inches in depth.

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2.3 Performance characteristics.

2.3.1 Penetration/impact resistance. The helmet shall be tested in accordance with the physical penetration resistance test of NFPA 1971, after exposure to heat as outlined in NFPA 1971 for heat and thermal shrinkage resistance test, within 30 ± 5 seconds after removal from heat source. The following exceptions shall apply:

- a. The drop height shall be 8 feet for the top plane and 4 feet for the side plane.
- b. During the top plane penetration test, the impact transmission force shall be measured. The electronic force measuring system shall be in accordance with the test method for top impact resistance of NFPA 1971. A single top impact force exceeding 850 pounds shall constitute a failure.
- c. Two determinations shall be made for both top- and side-impact testing, one determination per helmet.
- d. The weight of the penetration test striker shall be 6 pounds, 10 ounces ± 0.1 pound. The point of the striker shall have an included angle of 60 ± 0.5 degrees and a cone altitude or height of not less than 1.5 inches. The radius of the striker point shall be 0.0197 ± 0.004 inch. The hardness of the striking tip shall be a minimum of 60 Rockwell (Scale C).

3. **REGULATORY REQUIREMENTS.** The offeror/contractor is encouraged to use recovered materials to the maximum extent practicable, in accordance with paragraph 23.403 of the Federal Acquisition Regulation (FAR).

4. **PRODUCT CONFORMANCE PROVISIONS.**

4.1 Product conformance. The products provided shall meet the salient characteristics of this Commercial Item Description, conform to the producer's own drawings, specifications, standards, and quality assurance practices, and be the same product offered for sale in the commercial marketplace. The government reserves the right to require proof of such conformance.

5. **PACKAGING.** Preservation, packing, and marking shall be as specified in the contract or order.

6. **NOTES.**

6.1 Source of documents.

6.2.1 ANSI. ANSI standards are available from the American National Standards Institute, 25 W. 43rd St, 4th Floor, New York, NY 10036 or online at <http://webstore.ansi.org/>.

6.2.2 ASTM. ASTM standards are available from ASTM International, 100 Barr Harbor Dr., PO Box C700, West Conshohocken, PA 19428-2959 or online at www.astm.org.

6.2.3 FAR. The Federal Acquisition Regulation may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402 or online at <http://www.arnet.gov/far>.

6.2.4 NFPA. NFPA standards are available from NFPA, 1 Batterymarch Park, Quincy, MA 02169-7471 or online at www.nfpa.org.

6.3 Ordering data. The contract or order should specify the following:

- a. CID document number.
- b. National Stock Number.
- c. Product conformance provisions.
- d. Quantity required.

6.4 National stock numbers (NSNs). The NSN for this item is 4210-01-493-7428.

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6.5 Key words.

Damage control
Fire fighter
Fireman's helmet
Head protection
Personnel protection
Shipboard

MILITARY INTERESTS

Custodians:

Army – EA
Navy – SH
Air Force – 99

Review Activities:

Air Force – 03, 11, 84

CIVIL AGENCY COORDINATING ACTIVITY:
GSA – FSS

Preparing Activity:

Navy – SH
(Project 4240-2007-001)

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